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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/558,645	04/26/2000	Alexander Kaplan	08935-170001/M-4860	9640
26161	7590	05/25/2006	EXAMINER	
FISH & RICHARDSON PC P.O. BOX 1022 MINNEAPOLIS, MN 55440-1022			EDMONDSON, LYNNE RENEE	
			ART UNIT	PAPER NUMBER
			1725	
DATE MAILED: 05/25/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/558,645

Applicant(s)

KAPLAN ET AL

Examiner

Lynne Edmondson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 15-43 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 39-43 is/are allowed.
- 6) ☒ Claim(s) 15-38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

Priority

1. Applicant's claim for the benefit of a prior-filed application under 35 U.S.C. 119(e) or under 35 U.S.C. 120, 121, or 365(c) is acknowledged. Applicant has not complied with one or more conditions for receiving the benefit of an earlier filing date under 35 U.S.C. 120 as follows:

The later-filed application must be an application for a patent for an invention which is also disclosed in the prior application (the parent or original nonprovisional application or provisional application). The disclosure of the invention in the parent application and in the later-filed application must be sufficient to comply with the requirements of the first paragraph of 35 U.S.C. 112. See *Transco Products, Inc. v. Performance Contracting, Inc.*, 38 F.3d 551, 32 USPQ2d 1077 (Fed. Cir. 1994).

The disclosure of the prior-filed application, Application No. 09/487355, fails to provide adequate support or enablement in the manner provided by the first paragraph of 35 U.S.C. 112 for one or more claims of this application. The '355 application does not teach the method of making the cathode as disclosed in instant claims 39-43. Neither are prismatic or racetrack batteries taught. It is further noted that the drawings are different.

The disclosure of the prior-filed application, Application No. 09/544076, fails to provide adequate support or enablement in the manner provided by the first paragraph of 35 U.S.C. 112 for one or more claims of this application. The '076 application does

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not teach the method of making the cathode as disclosed in instant claims 39-43 or C or D batteries. It is further noted that the drawings are different.

2. Note that should the continuation be pursued, allowed claims 39-43 will become new matter.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 15-31 and 34-38 are rejected under 35 U.S.C. 102(e) as being anticipated by Kaplan et al. (USPN 6372370 B1).

Kaplan teaches a cylindrical air recovery battery comprising a container having an air access port (opening 25), a seal assembly (160), a cathode (50) coated on a collector, the coating comprises 60-93% MnO₂, carbon and 2-25% of a hydrophobic binder (PTFE), preferably 2-7% binder (col 4 lines 4-10), a zinc anode (100, col 5 lines 50-58) and separators (40) (col 2 line 49 0- col 3 line 53). The battery may be wound into a cylindrical shape (figure 1). Any size battery can be formed including but not limited to AA, AAA, C and D (col 3 lines 1-4) size cells.

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

4. Claims 15-29 and 33-38 are rejected under 35 U.S.C. 102(e) as being anticipated by Kaplan et al. (USPN 6399243 B1).

Kaplan teaches an air recovery battery with a racetrack configuration (col 3 lines 1-27) comprising a container (20) having an air access ports (openings, col 4 lines 45-48), a seal assembly (141), a cathode (50) coated on a collector (col 3 lines 44-57), the coating comprises 60-93% MnO₂, carbon and 2-25% of a hydrophobic binder (PTFE) (col 3 lines 44-63), preferably 2-7% binder (col 4 lines 8-19), a zinc anode (80) and separators (40) (col 3 lines 6-15 and col 4 lines 45-67). The battery may be wound into a cylindrical shape. Any size battery can be formed including but not limited to AA and AAA (col 3 lines 27-34) size cells. See also Kaplan claims 1-8, 14-20 and 24-26.

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in

the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 15-23 and 26-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Urry (USPN 6383674 B1) in view of Kordesch et al. (USPN 3945874).

Urry teaches an air battery comprising a container (20) having an air access port (opening, 26), (col 3 lines 26-48), a cathode (60) coated on a collector (foil) comprising a hydrophobic binder (PTFE) mixed with graphite and MnO₂ (col 4 lines 36-67), a zinc anode (70) and separators (75) (col 6 lines 3-33). The battery may be wound into a cylindrical shape (figure 1 and col 5 lines 12-48) or prismatic shape (col 3 lines 25-33). A flat rolled battery would be racetrack (oval) shaped. Any size battery can be formed including but not limited to AA (col 6 lines 45-53) size cells. However, no other cylindrical battery sizes are taught. Neither are MnO₂ amounts further disclosed.

Kordesch teaches a battery (col 1 lines 11-22) comprising a container (34) having a port (38), a cathode (28) coated on a collector (36), a zinc anode (31) and

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separators (32,33) (figure 4, col 4 lines 25-49, col 5 lines 1-42 and col 9 lines 1-22). The battery may be any shape including but not limited to prismatic (flat) (col 1 lines 22-26), rectangular (col 4 lines 1-24) or cylindrical (col 9 lines 39-45). The cathode comprises up to 90% MnO₂ and 8% carbon with a binder material (col 5 lines 25-40) comprising 2.5-3.0 % of a hydrophobic polymer binder (col 11 lines 50-60) or up to 5% (col 18 lines 40-41). The composition may contain 70-80, 80 or 85% MnO₂ (col 8 lines 32-49). Any size battery can be formed including but not limited to AA (col 13 line 65), C and D (col 15 lines 30-51) size cells. AAA batteries would be formed the same way. The battery may also be rectangular with parallel elements forming a racetrack battery (figures 15 and 16).

It would have been obvious to one of ordinary skill in the art at the time of the invention to employ a relatively low binder content (10% or less) to provide stability and minimize passage of air into the anode thereby maximizing performance (Urry, col 2 lines 25-40). Too much binder decreases strength while too little prevents good adhesion of the cathode material. It is presumed that all cylindrical batteries would be made the same way regardless of size.

6. Claims 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Urry (USPN 6383674 B1) in view of Kordes et al. (USPN 3945874) as applied to claims 15-23 above, and further in view of Passaniti et al. (USPN 6261709 B1).

Urry teaches an air battery comprising a container (20) having an air access port (opening, 26), (col 3 lines 26-48), a cathode (60) coated on a collector (foil) comprising

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a hydrophobic binder (PTFE) mixed with graphite and MnO₂ (col 4 lines 36-67), a zinc anode (70) and separators (75) (col 6 lines 3-33). The battery may be wound into a cylindrical shape (figure 1 and col 5 lines 12-48) or prismatic shape (col 3 lines 25-33). A flat rolled battery would be racetrack (oval) shaped. Any size battery can be formed including but not limited to AA (col 6 lines 45-53) size cells. However, no other cylindrical battery sizes are taught. Neither are MnO₂ amounts further disclosed.

Kordesch teaches a battery (col 1 lines 11-22) comprising a container (34) having a port (38), a cathode (28) coated on a collector (36), a zinc anode (31) and separators (32,33) (figure 4, col 4 lines 25-49, col 5 lines 1-42 and col 9 lines 1-22). The battery may be any shape including but not limited to prismatic (flat) (col 1 lines 22-26), rectangular (col 4 lines 1-24) or cylindrical (col 9 lines 39-45). The cathode comprises up to 90% MnO₂ and 8% carbon with a binder material (col 5 lines 25-40) comprising 2.5-3.0 % of a hydrophobic polymer binder (col 11 lines 50-60) or up to 5% (col 18 lines 40-41). The composition may contain 70-80, 80 or 85% MnO₂ (col 8 lines 32-49). Any size battery can be formed including but not limited to AA (col 13 line 65), C and D (col 15 lines 30-51) size cells. AAA batteries would be formed the same way. The battery may also be rectangular with parallel elements forming a racetrack battery (figures 15 and 16).

However neither reference teaches binder amounts greater than 5%.

Passaniti teaches an air battery comprising a cathode coated on a collector (col 8 lines 8-47 and col 12 lines 1-11) wherein the cathode comprises 3-10% PTFE (col 14 line 46 – col 15 line 4) and MnO₂ with a zinc anode (col 6 lines 40-67). The

components are cylindrically wound to form a AA size cell (figure 4 and col 8 lines 32-36).

It would have been obvious to one of ordinary skill in the art at the time of the invention to optimize binder content (10% or less, preferably 7% or less) to provide stability and minimize passage of air into the anode thereby maximizing performance (Urry, col 2 lines 25-40). Too much binder decreases strength while too little prevents good adhesion of the cathode material.

7. Claims 30 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaplan et al. (USPN 6399243 B1).

Kaplan teaches an air recovery battery with a racetrack configuration (col 3 lines 1-27) comprising a container (20) having an air access ports (openings, col 4 lines 45-48), a seal assembly (141), a cathode (50) coated on a collector (col 3 lines 44-57), the coating comprises 60-93% MnO₂, carbon and 2-25% of a hydrophobic binder (PTFE) (col 3 lines 44-63), preferably 2-7% binder (col 4 lines 8-19), a zinc anode (80) and separators (40) (col 3 lines 6-15 and col 4 lines 45-67). The battery may be wound into a cylindrical shape. Any size battery can be formed including but not limited to AA and AAA (col 3 lines 27-34) size cells. However, there is no disclosure of C or D batteries.

It would have been obvious to one of ordinary skill in the art at the time of the invention that the same process would be used to make cylindrical air batteries of a variety of sizes including C and D size cells depending on the application or use of the

cell (Kaplan, col 3 lines 28-34). Although more material would be used for larger batteries, the process is essentially the same.

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(I)(1) and § 706.02(I)(2).

Response to Arguments

8. Applicant's arguments with respect to claims 15-19, 26, 27, 29, 32 and 33 have been considered but are moot in view of the new ground(s) of rejection.

9. Regarding applicant's argument that U.S. Patent 6399243 B1 is no longer applicable as prior art as it has newly become the parent case, the disclosure of the prior-filed application, Application No. 09/544076, fails to provide adequate support or enablement in the manner provided by the first paragraph of 35 U.S.C. 112 for one or more claims of this application. The '076 application does not teach the method of making the cathode as disclosed in instant claims 38-43 or C or D batteries. Neither are prismatic batteries taught. It is further noted that the drawings and inventive entities are different.

Therefore the 102 rejection of claims 15-29 and 33-38 as anticipated by Kaplan and the 103 rejection of claims 30 and 31 as obvious over Kaplan stands.

10. Regarding applicant's argument that Kordesch does not specifically teach an air cathode, it is noted that this is not a 102 rejection. Although the word air is not specifically used, it is noted that alkaline batteries can be air batteries as is known in the art.

11. In response to applicant's argument that Kordesh is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, although the word air is not specifically used, it is noted that alkaline batteries can be air batteries as is known in the art. Further Zn anodes and MnO₂ cathodes which

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are both taught in the reference are known components of air batteries. See Hampden-Smith et al. (USPN 6911412 B2, Zn-air alkaline battery).

Therefore the 103 rejection of claims 20-23, 27, 28, 30, 31 and 34-38 as obvious over Kaplan stands and now includes claims 15-19, 26, 29, 32 and 33.

Allowable Subject Matter

12. Claims 39-43 are allowed.

13. The following is an examiner's statement of reasons for allowance: The closest prior art teaches a method of making a backing layer with no catalyst using the instant method. A separate catalyst layer may be subsequently attached but is not a component of the initial mixture or paste. See Debe et al. (USPN 6183668).

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Hampden-Smith et al. (USPN 6911412 B2, Zn-air alkaline battery), Sotomura et al. (USPN 6939630 B2, alkaline air battery), Taucher et al. (WO

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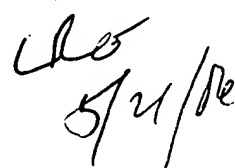
93/12551 A1), Chandramouli et al. (USPN 4775455, catalyst, carbon, stirring at room T), Getz et al. (USPN 5464709, hydrophobic binder, >60% MnO₂) and Thiebolt, II et al. (USPN 6174622 B1, PTFE, >60% MnO₂).

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lynne Edmondson whose telephone number is (571) 272-1172. The examiner can normally be reached on Monday through Thursday from 6:30 a.m. to 5 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Lynne Edmondson
Primary Examiner
Art Unit 1725



LRE